

Remarks

The following rejections are presented in the Office Action dated November 19, 2009: claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) over Balakrishnan (U.S. Patent No. 6,813,168) in view of Saleh (U.S. Patent No 4,353,114); claim 7 stands rejected under 35 U.S.C. § 103(a) over the '168 and '114 references and further in view of Balakrishnan (U.S. Patent 6,525,514); claims 8-11 stand rejected under 35 U.S.C. § 103(a) over the '168 and '114 references and further in view of the TEA152x family data sheet by Phillips. Claims 6 and 12-15 are allowed. Claims 3-5 are objected to but would be allowable if rewritten. Applicant traverses all of the rejections and, unless explicitly stated by the Applicant, does not acquiesce to any objection, rejection or averment made in the Office Action.

Applicant appreciates the indication that claims 6 and 12-15 are allowed.

Applicant submits that the §103 rejections of claims 1, 2 and 7-11 are improper. The Office Action acknowledges that the cited portions of the '168 reference do not correspond to the claimed invention. Specifically, the Office Action acknowledges that Fig. 6 of the '168 reference is silent as to the use of a non-electrolytic capacitor in the filter circuit and, additionally, fails to disclose a switched mode power supply that is integrated as claimed by the Applicant. Additionally, although not acknowledged by the Office Action, Fig. 6 of the '168 reference does not disclose a conductive impedance element connected in series to the non-electrolytic capacitor to extend the second signal path to common as claimed by Applicant.

The Office Action proposes to modify Fig. 6 of the '168 reference to include the capacitor (Fig.1a C41) shown in the '114 reference in series with conductive impedance element (Fig. 1a L1) of the '168 reference, following rectifier circuit 600 of the '168 reference. It is unclear to Applicant the manner in which the Office Action proposes to perform the stated modification (*e.g.* whether elements C41 and L1 of the '114 reference allegedly would be incorporated into the filter (Fig. 6 602-604) of the '168 reference, or whether the skilled artisan would replace the filter (Fig. 6 602-604) of the '168 reference with the entire filter (Fig. 1A CR52, C41 C42, L1, C45, C46) disclosed in the '114 reference).

If the Office Action proposes to modify the '168 reference with the entire filter circuit disclosed in the '114 reference, Applicant asserts that neither reference teaches nor suggests that the filter of the '114 reference is desirable for use in the substantially different circuit of the '168 reference (as is readily apparent from the cited '114 Fig. 1A and '168 Fig. 6). According to M.P.E.P. § 2141, where evidence of motivation has not been provided, the Applicant can rebut such assertions of obviousness simply by showing that "the elements in combination do not merely perform the function that each element performs separately." Further, the references provide no indication that the filter of the '114 reference would result in the alleged benefits in the '168 reference of assuring "a relatively steady DC output voltage at DC output as required for efficient operation of a power conversion circuit that is to be coupled to receive the DC output voltage at DC output". There is no teaching or suggestion that the filter of the '114 reference is capable of providing the benefit when a half wave rectifier is used as shown in Fig. 4B of the '168 reference.

Further, the '168 reference teaches away from the use of the filter of the '114 reference. Consistent with the recent Supreme Court decision, M.P.E.P. § 2143.01 explains the long-standing principle that a § 103 rejection cannot be maintained when the asserted modification undermines either the operation or the purpose of the main ('168) reference - the rationale being that the prior art teaches away from such a modification. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007) ("[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious.").

The '168 reference teaches away from the use of the filter of the '114 reference as it would defeat the benefit of "reduc[ing] the cost and complexity of input EMI filter circuitry...." Particularly, the '168 reference teaches that it is desirable to use a single larger bulk capacitor for smoothing and filtering as "the elimination of one bulk storage capacitor typically provides a significant cost savings over the configuration [with several smaller capacitors] since the cost of each capacitor component is strongly influenced by the packaging itself which is reduced using a single component." Because the filter of the '114 reference includes four filtering capacitors (Fig. 1A C41, C42, C45, C46), Applicant submits that there is no evidence of record that provides any reason why the

skilled artisan would modify Fig. 6 of the '168 reference to include the filter disclosed in the '114 reference. Under M.P.E.P. § 2143.01, the rejections cannot be maintained.

If, alternately, the Office Action proposes to modify the '168 reference (Fig. 6) to include the non-electrolytic capacitor C41 and conductive impedance element L1 of the '114 reference, Applicant submits that the Examiner has simply identified common circuit elements (which can be found in any number of references) and then arranged these elements using the claimed invention as a template. This is the hallmark of improper hindsight reconstruction with the proposed combination being derived, not "on the basis of the facts gleaned from the prior art," but solely from Applicant's disclosure. *See, e.g.*, M.P.E.P. §2142. As stated above, there is no teaching or suggestion that the non-electrolytic capacitor is capable of smoothing or filtering a "half wave rectified" input as to provide "a relatively steady DC output voltage at DC output." Further, the '114 reference does not teach that a non-electrolytic capacitor is capable of smoothing or filtering when separated from other smoothing components disclosed in the filter of the '114 reference such as electrolytic capacitor C42 and zener diode CR52 (Fig. 1A.) As such, there is no evidence of record that provides any reason why the skilled artisan would modify Fig. 6 of the '168 reference to include a non-electrolytic capacitor in series with a conductive inductive element, extending the path to common, and following a half wave rectifier. As such, the § 103 rejections must fail.

Applicant further traverses the § 103(a) rejection of claim 7 because the asserted '168, '114 and '514 references do not correspond to the claimed invention. The Office Action acknowledges, in the specific rejection of claim 7, that the cited portions of the '168 and '114 references do not correspond to the claimed invention in that they "do not require the power transistor be integrated into the switch mode power supply integrated circuit". The Office Action proposes to modify the controller IC (Fig. 1A U-1) of the '114 reference to integrate a power transistor as taught by (Fig. 1 139) of the '514 reference. However, although regulator 139 teaches the integration of a transistor (Fig. 2 229), the '514 reference does not teach or suggest that a power transistor capable of smoothing a "half rectified signal", as required by the cited embodiment of the '168 reference, can be integrated. The '514 reference teaches that a transistor capable of smoothing an AC input that is fully rectified by a rectifier bridge (Fig. 1 diodes 103, 105,

107, 109) can be integrated into regulator 139. However, when a half wave rectifier is used the resulting waveform from the filter is less uniform than that of a fully rectified signal. As a result, the power transistor of the switched mode power supply IC would drain more current to provide a stable DC output which generates a greater amount of heat. The '514 reference does not teach or suggest that the integrated transistor is capable of smoothing a half rectified signal. As such, there is no evidence of record that provides any reason why the skilled artisan would modify Fig. 1A of the '114 reference to integrate a power transistor used to smooth the half rectified input of Fig. 6 of the '168 reference.

Applicant further traverses the § 103(a) rejection of claim 2 because the skilled artisan would not routinely experiment (for a non-specified purpose) with such values of a non-electrolytic storage capacitor C1 from Fig. 1A of the '114 reference since the storage capacitor C1 is an electrolytic capacitor. M.P.E.P. § 2144.05 II. B –Only Result-Effective Variables Can Be Optimized, states:

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result- effective variable.).

In the context of the present invention, the Examiner has not asserted any teaching or suggestion in the prior art that shows that smoothing of a half wave rectified input is a function of the value of the non-electrolytic capacitor. As such, the § 103(a) rejection of claim 2 is improper and Applicant requests that it be withdrawn.

Regarding claims 8-11, Applicant submits that the TEA152X reference fails to cure the deficiencies noted above with respect to the '168 and '114 references. Moreover, the TEA152X reference discloses only the use of a full bridge rectifier, and does not teach or suggest the use of a single diode rectifier as recited in Applicant's claims. The Examiner has provided no evidence that a SMPS IC such as shown in the TEA152X reference could be used with anything other than a full bridge rectifier as taught in the TEA152X reference. Applicant's own specification provides the only

evidence of record for the use of a single diode rectifier with a SMPS IC such as shown in the TEA152X reference. As such, the proposed combination stated in the Office Action is once again based on improper hindsight reconstruction in view of Applicant's disclosure.

In view of the above, the § 103(a) rejections of claims 1, 2, 7-11 are improper.

Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Juergen Krause-Polstorff, of NXP Corporation at (408) 474-9062 (or the undersigned).

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